

Long Island Botanical Society

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The Quarterly Newsletter

Fall 2012

***Phellodendron amurense* Rupr. and the Woodlands of Long Island**

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Although the problem of invasive species is not new, their varied impacts have been of increasing importance to society and the scientific community. Over seven centuries ago, humanity was devastated when merchant ships accidentally carried a rat species from the tropics of Asia throughout Europe. Infesting the rats were fleas that were infected with a gram-negative rod-shaped bacterium, the causal agent of the Black Death. Even with the millions of lives lost and extraordinary economic costs, it is only since the publication in 1958 of Charles Elton's *The Ecology of Invasions by Animals and Plants*, that increased attention has been paid to the problems associated with non-native, invasive species. With recent cost estimates reported to reach as high as \$137 billion per year (Pimentel et al. 2005), the impact of invasive organisms is of importance not only to scientists, but also to land managers, economists, policy makers and public health officials.

In the fields of plant biology and ecology, we are often concerned with the invasion of our native ecosystems by newly introduced organisms including pathogenic fungi, oomycetes, viruses, insects and, of course, angiosperms. Over the past century Long Island has seen its forests drastically altered by an onslaught on invasive organisms ranging from pathogens such as chestnut blight (*Cryphonectria parasitica*) and Dutch elm disease (*Ophiostoma*spp.), to insects including the hemlock woolly adelgid (*Adelges tsugae*). A more recent problem seen on the island is the disease complex of phytoplasmas known as ash yellows group (esp., *Candidatus Phytoplasma fraxini*). The northeastern section of Alley Pond Park in Queens County offers a glimpse at the devastation caused by this pathogen: nearly one hundred percent of white ash (*Fraxinus americana*) specimens are dead or dying. Of course there are still larger invaders, the vascular plants that have been introduced intentionally or not, and are now ubiquitous in our landscape. Our forests are filled with

Norway maple (*Acer platanoides*), our roadsides with tree of heaven (*Ailanthus altissima*), and our woodland understories with multiflora rose (*Rosa multiflora*).

Another invasive woody plant is the Amur cork tree (*Phellodendron amurense*). A native of Asia, *Phellodendron amurense* joins the long list of non-native plants finding a new home through intentional horticultural introduction. *Phellodendron amurense* can reach sixty feet in height and forty feet in crown width. Its leaves are opposite in arrangement on the stem, and imparipinnate (odd-pinnate), usually with seven to eleven leaflets (Figure 1). Flowers appear in the spring (Figure 2). Perhaps the easiest characteristic to identify the tree is the bright yellow color exposed upon scraping the bark. Trees are dioecious, although there are several undocumented reports of sexual shifts in an individual. Because of its ornamental qualities, and its adaptability to urban and suburban habitats, *P. amurense* has been available in the nursery trade for over a century, although it has never become a commonly planted tree, likely due to its large size. In spite of this, it has found its niche in horticulture as a common tree in botanic gardens and arboreta, as well as some public parks. Sargent (1894) reported over a hundred years ago that it was present in most large collections in North America. On Long Island, *Phellodendron* has a history as a street tree, and has even recently been planted in Bayside, Queens, and possibly other sites. In spite of this relatively limited founder population, *P. amurense* appears to be at a crossroads on Long Island and throughout the area.

The adventive nature of *P. amurense* has been documented on Long Island for several decades. Greller (1977) reported the tree in Cunningham Park, and later Greller et al. (1979) reported the tree in Forest Park. In both cases, the tree had been identified as *Phellodendron japonicum*, a species which is no longer recognized.

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Long Island Botanical Society

Founded: 1986 • Incorporated: 1989

The Long Island Botanical Society is dedicated to the promotion of field botany and a greater understanding of the plants that grow wild on Long Island, New York.

Visit the Society's Web site
www.libotanical.org

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Society News

ANNOUNCING BY-LAWS REVISION

The Executive Committee of the Long Island Botanical Society deems it necessary to revise the By-Laws, which were drawn up in 1987. At the October 2012 LIBS membership meeting, copies of the 1987 By-Laws and copies of the proposed 2012 revision will be available to the membership. Copies will also be available electronically or by mail upon request. Contact LIBS President Eric Lamont for a copy. At the November membership meeting the revisions to the By-Laws will be voted on by the LIBS membership.



These two new books may be of interest to LIBS members

Orchids of New England & New York

by Eric Lamont and Tom Nelson. Retail \$18.95
Kollath-Stensaas Publishers, 160 pages. ISBN: 978-1-936571-04-8

From the publisher's website: The definitive field guide for the seven state region (New York, Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, and Connecticut). An innovative format makes field identification a snap. All 65 species/varieties of orchids found in New England & New York. Maps for every species. Red-bar phenograms show you when each species blooms. Seed capsules shown for most species. Over 200 scientific references. 250-plus color photos.

Spring Wildflowers of the Northeast: A Natural History

by Carol Gracie. Retail \$29.95
Princeton University Press, 290 pages. ISBN: 978-0-691144-66-5

From the publisher's website: This exquisitely illustrated volume provides an in-depth look at spring-blooming wildflowers of the Northeast, from old favorites to lesser-known species. Featuring more than 500 full-color photos in a stunning large-sized format, the book delves deep into the life histories, lore, and cultural uses of more than 35 plant species. The rich narrative covers topics such as the naming of wildflowers; the reasons for taxonomic changes; pollination of flowers and dispersal of seeds; uses by Native Americans; related species in other parts of the world; herbivores, plant pathogens, and pests; medicinal uses; and wildflower references in history, literature, and art. The photos capture the beauty of these plants and also illustrate the concepts discussed in the text.

Join LIBS today!

Annual Membership is \$20 payable to:

Long Island Botanical Society

Mail your dues to:
Carol Johnston, LIBS Treasurer
347 Duck Pond Road
Locust Valley, NY 11560

NOTE: Membership renewals are due in January

A Tribute to Vince

REMEMBERING VINCENT A. PUGLISI

by Betsy Gulotta

Vincent Puglisi, Professor of Biology at Nassau Community College for over 30 years, passed away on June 16 in his 83rd year. Vince taught several different biology courses, including Field Biology, and was an expert in field ecology. His field courses included trips all over Long Island as well as time on the department boat in Great South Bay. He also co-founded Nassau Community College's international studies course on Field Biology in Costa Rica, and brought classes there for nearly 10 years.

Vince was instrumental in working with the College in the 1980s to preserve the last remaining parcel of the historic Hempstead Plains on the campus before it would have been lost to development. He was one of the founding members of Friends of Hempstead Plains at Nassau Community College, formed in 2001 to preserve these last 19 acres. He spent many hours with his classes touring the Hempstead Plains in the days when it still spread over many more acres than exist today. Vince served as Treasurer of the Friends for several years, and was active on the Management Committee.

EXCERPTS FROM LIBS MINUTES

Compiled by Barbara Conolly (and abridged by the editors)

Oct. 21, 1986: Vince discussed what was involved in achieving a non-profit status. He agreed to work with Kim Zarillo and Bob Zaremba on a constitution for LIBS.

Nov. 18, 1986: Vince handed out a copy of a possible constitution to be voted on at the next meeting. The by-laws would follow.

April 14, 1987: Vince reported that a final draft of the by-laws had been drawn up after four revisions.

Oct. 11, 1988: Vince handed out by-laws which were to be voted on at the next meeting.

March 14, 1989: Vince Puglisi and Glenn Richard will prepare a descriptive brochure about LIBS.

April 11, 1989: Vince announced 1) Hofstra is seeking volunteer consultants, 2) LIBS will exchange newsletters with

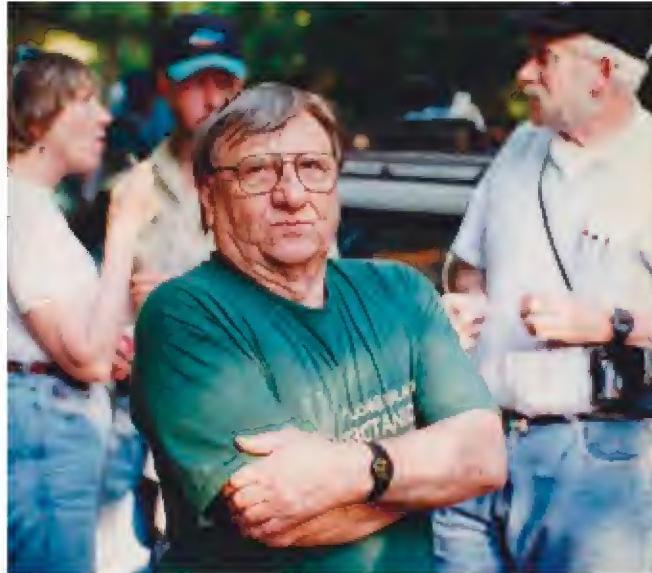


Fig. 1 I researched my albums and came up with a great picture of Vince – head-on – looking ferocious! Karen Blumer and Ray Welch are on either side. It was taken at the Swan Pond Biological Station on June 6, 1997. [Barbara Conolly]

other botanical organizations, 3) this week is the third anniversary of LIBS!

May 9, 1989: Vince offered a slide show about palynology including images of corings done in the Gulf of Maine on a research ship, ten years ago. We were most impressed that the corings were done in 30-foot-high waves!

Nov. 14, 1989: Vince was elected President of LIBS.

Feb. 13, 1990: President Vince Puglisi called the meeting to order and announced that we now had a viable Flora Committee to produce a draft atlas of L.I. plants.

April 17, 1990: Vince read a letter he had drafted to Gov. Cuomo, protesting the sale of state lands at Riverhead, Kings Park and Nissequogue River, though some of these lands had been acquired by the state in order to preserve them. He also said we are desperately in need of a volunteer Program Chairman.

June 2, 1990: Along with Skip Blanchard, Eric Lamont, and Carole Neidich, Vince Puglisi led a field trip to the Hempstead Plains, Uniondale. [Ed. Note: this information is from the field trip database.]

May 8, 1990: Vince issued an extended plea for money!

Dec. 11, 1990: The by-laws were discussed and unanimously accepted as written. Vince Puglisi announced that due to personal complications, he would have to step down as President in January of 1991, having fulfilled one year of his two-year term.

LIBS MEMBERS' RECOLLECTIONS

Those who attended the September 2011 Hubbard Creek Marsh field trip will remember that Vince took several bad falls as we slogged across muddy ditches on the way back to our cars. Months later I ran into Vince at Long Island Traditional Music Association's Winter Solstice Celebration. He told me that he thanked LIBS for saving his life, because those falls prompted him to seek medical attention, and his cancer was diagnosed. Not many of his botanical colleagues knew this, but Vince enjoyed folk music and could even be known to dance! –by Margaret Conover

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(Vince cont. from page 31)

I was talking with Vince before the start of a LIBS meeting - this must have been around 2004 - and he was telling me that he had been afraid he wasn't going to make it to the meeting that evening. He had left his hearing aids on a table and found only one there as he was heading out the door. A search turned up nothing. Suspecting feline theft, he waved a hearing aid in front of the cat and said, "Fetch!" The cat fetched . . . a pencil. "No. Look. Like this." Off went the cat again and came back carrying Vince's missing hearing aid. I would never have thought of asking. -by Jane Blanchard

I recall Vince's "edgy" behavior in the field—knife-edgy. He had a habit of wielding the sheath knife that he almost invariably carried, using it to dig up any plant (short of a tree) that he wanted to bring to our attention. We used to cringe as he approached the federally endangered sandplain gerardia at the Hempstead Plains! When on occasion he left his knife at home it was because he was sporting his machete instead. He cut a fine figure with the scabbard hanging down almost to his ankles. I can't imagine that he would fail to take it with him on his class trips to Costa Rica. —by Skip Blanchard

Vince Puglisi will long be remembered in my mind as a friendly bundle of enthusiasm. He was truly of the natural world and melded comfortably in the faithful brigade of the Long Island Botanical Society. When Vince presented his programs, I would lean forward toward an education that rivaled entertainment. And along with it, appreciated the antiquated equipment he used which was a testament to the longevity of his passion for the plant world. Surely, God was anxious to have him by his side and is now enjoying his captivating spirit. —by John Potente



Fig. 2 Vince in his traditional cross-armed posture following the Hubbard Creek Marsh field trip, September 2011. [Eric Lamont]

PECONIC DUNES FIELD TRIP

September 22, 2012

by Barbara H. Conolly

Four LIBS members (Rich Kelly, Mike Feder, Mary Normandia and Barbara Conolly) powered down east to meet Guy Tudor and four North Fork enthusiasts, Louise Harrison, Brook Lauro, Janet Bidwell and Diana Van Buren (President of North Fork Audubon), at Peconic Dunes Preserve on Saturday, September 22, 2012.

Louise Harrison (one of LIBS founding members years ago) led us on a fascinating walk through the dunes. In this area, dunes were established by constant winds off the Sound, laying down primary and secondary dunes, paralleling the coast, with swales in between. From the beginning we took in broad beech fern (*Phegopteris hexagonoptera*), which was in the woods where we parked, lots of white wood aster in bloom (*Eurybia divaricata*), sweet cicely (*Osmorhiza claytonii*), and a tiny stand of bartonia (*Bartonia virginica*) in a boggy swale. These interdunal bogs were carpeted with large cranberry (*Vaccinium macrocarpon*), marsh fern (*Thelypteris palustris*), and spotted with rhexia (*Rhexia virginica*).

Other species recorded were white oak (*Quercus alba*), post oak (*Quercus stellata*), water willow (*Decodon verticillatus*), mockernut hickory (*Carya alba*), serviceberry (*Amelanchier* sp.) and common polygonum (*Persicaria longiseta*). We also encountered a slippery bolete, and a red-backed salamander (under a board which Mike lifted up).

Though the habitat seemed uniform as we walked west, we actually crossed a bit of private property and entered into Soundview Dunes County Park. The whole area was white sand with occasional trees sculpted by the wind, deep swales protected from the wind, occasional views of the sapphire blue Sound and shallow ponds – a beautiful walk.

Louise had us back to her house, perched over Goldsmith Inlet, for a rest stop, lunch and snacks – a perfect ending to a grand field trip.

The four indefatigable LIBS members went on down the north fork to the rocky edge of Orient Harbor at East Marion to see the horn poppy (*Glauicum flavum*) ensconced in the rocks along the south side of the causeway to Orient. We saw dozens of their interesting blue-green spiny rosettes, but none with the spectacular semicircular pods they form, as the area had been inundated last year and we were seeing the first year form of the biennial plant.

Also seen were Montauk daisy (*Chrysanthemum nipponicum*) (not planted), annual wormwood (*Artemisia annua*), sea lavender (*Limonium carolinianum*), sea-blite (*Suaeda maritima*), slender glasswort (*Salicornia depressa*), common saltwort (*Salsola kali*), and a hundred million fiddler crabs scuttling through the smooth cord-grass (*Spartina alterniflora*).

(*Phellodendron* cont. from cover)



Fig. 1 Compound leaf of *Phellodendron amurense*. [Morgan]

The revision of the genus by Ma et al. (2006) reduced the number of *Phellodendron* species to two. It has subsequently been determined that *P. amurense* is the only species present on Long Island. Complete accounts of the various *Phellodendron* specimens recorded and collected under previous names have been compiled by de la Cruz and Nee (unpublished report) and by Morgan and Borysiewicz (2012). Failure to recognize Long Island's *Phellodendron* as a single species may have led to the invasiveness of this plant being overlooked for many years. Confusing the situation further is the absence of this species from most field guides prior to 2005, and the fact that the few guides that do include it often provide only a cursory description.

The first well-documented signs of a problem in our area came from the work of Glaeser and Kincaid (2005). Working in Forest Park in Queens County, they recorded over 150 trees within their 0.5 hectare study area, and found that *P. amurense* was fourth in importance value out of 22 arborescent taxa. The Forest Park site remains the largest known invasion by the species on Long Island, although numerous sites within 100 miles of the area include several hundred individuals, highlighting the potential of the species to spread. In a recent study using the tree-ring data from nearly 300 trees in one site, it has been shown that *P. amurense* can become the dominant tree in just a few decades, even without a major disturbance in the area (Morgan 2012). Luckily, many of the sites on Long Island still consist of only a few individual trees, although that may change as a closer examination of these sites continues.

Phellodendron amurense appears able to invade a wide variety of forest habitats, from oak-dominated sites to red maple-dominated wetlands. It can invade largely intact forests, as well as clearings (Morgan and Borysiewicz 2012), a trait that appears to run counter to the report (Yoshida and Kamitani 1999) that the species is shade intolerant in its native range. Seeds of *P. amurense* are dispersed by birds, which may contribute to the ability of the tree to reach the interior of

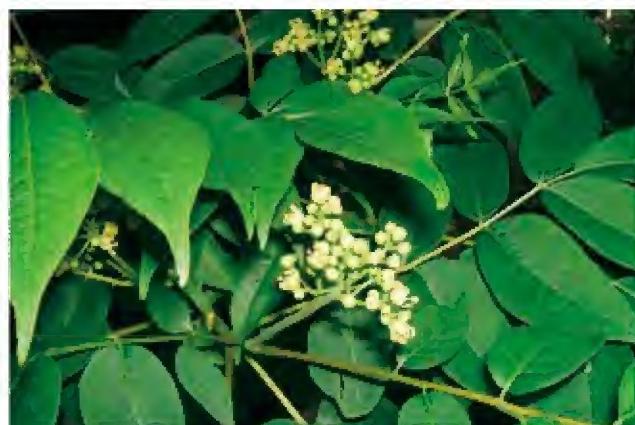


Fig. 2 Flowers of *Phellodendron amurense*. [Morgan]

many woodlands, where it can occupy any space available between native species (Morgan and Kincaid, manuscript in preparation). This will likely lead to discovery of additional invasions as searches for the plant expand off the more commonly used trails and into the interior sections of our woodlands.

At the time of this writing, sites of *P. amurense* invasions are now documented in all four Long Island counties. Most invasions, and the largest populations, occur in Queens County. Sites are predominately on the north shore of Queens, where there are apparently reproducing populations in Cunningham Park, Alley Pond Park, Oakland Lake, and Forest Park. Within Nassau County, four new sites were documented in the past eighteen months alone, including Freeport, where nine small trees ranging from 1.3 cm diameter breast height (dbh) to 7.2 cm dbh grow adjacent to salt water. This suggests that tolerance to high salinity is another characteristic that may help *Phellodendron* to thrive in a wide variety of conditions. Within Suffolk County, trees have been recorded at a number of sites on both public and private land including a stormwater basin with 34 trees in Selden, which at this time is the easternmost population.

Current research by the first author focuses on the response of *P. amurense* to sandier soil, a factor that may limit its survival in eastern Long Island environments. Other work documents the diminished success of *P. amurense* at higher temperatures and its higher growth rate in cooler temperatures (Morgan unpublished data), although it will be some time before this work is conclusive. While this will not help Long Island counteract the *Phellodendron* invasion, it may help to explain the apparent southern limit to its spread.

Having confirmed that this invasive plant is present throughout much of Long Island, we can now begin the work of promoting its removal from the region. Although populations of *Phellodendron amurense* reach into the hundreds

(Cont. on page 34)

(*Phellodendron* cont. from page 33)

in certain areas, the invasion has not yet reached the level where nothing can be done. This species provides a great opportunity to eliminate a potentially serious threat to our native woodlands and claim a small victory against invasives. Unfortunately, there is often little public support for the removal of trees. On Long Island, at least one municipality has declined to take steps to fully eradicate *P. amurense*. In that instance, only the male trees will be removed, a step likely to fail when pollen from undetected males reaches surviving female trees and viable seeds appear.

In short, our forests are under assault from a variety of potential problems. The destroyer of many areas is no longer just the bulldozer and construction, but biological organisms that look harmless to most. As scientists it is incumbent upon us to raise popular awareness of the damage caused by invasive species and to take action against these invaders

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FIELD TRIPS

OCTOBER 6, 2012 (SATURDAY) 10 AM

Muttontown Preserve, East Norwich, Nassau Co., NY

Trip Leaders: Al and Lois Lindberg
Email: ajlindberg@verizon.net

This preserve comprises 570 acres of fields and woodlands amid the rolling hills and kettlehole ponds of morainal northern Nassau County. Goldenrods and asters are abundant in Muttontown's late-successional fields and woodlands and will hopefully give us a good show on this early Autumn walk. The preserve is operated by the Nassau County Department of Parks, Recreation and Museums and is open from 9:30 to 4:30 daily. To find out more information about the Preserve and its programming call 516-571-8500.

Directions: Please meet at the Bill Paterson Nature Center at the main entrance. Take LIE ext 41 north following the fork to the right to Route 106. Go north on Route 106 for about 3.75 miles and make a left onto Route 25A. Make another left in 0.1 mile onto Muttontown Lane. The entrance is straight ahead.

OCTOBER 27, 2012 (SATURDAY) 10 AM

Alley Pond Environmental Center (APEC) and Oakland Lake Park, Douglaston, Queens Co., NY

Trip Leaders: Andrew Greller Ph.D.
Email: agreller2@optonline.net and Aline Euler Ed.D.

Autumn wildflowers and fall colors. Bring lunch and water. Wet walking is optional.

Directions: Meet at the APEC parking lot, 100 yards E of Cross Island Parkway on S side of Northern Boulevard. If using a map search, the address is 228-06 Northern Boulevard, Douglaston, NY 11362.

Goldenrod Workshop

by Rich Kelly

On September 15th, 2012 there was a joint New York Flora Association (NYFA)/Long Island Botanical Society (LIBS) goldenrod workshop.

LIBS President Eric Lamont conducted the workshop, which was held in his yard in Northville, Suffolk County, Long Island. There were 22 participants, some from as far away as Pennsylvania and upstate New York. The weather was great and everyone had a good time. We appreciated the preparatory work that Eric had done to make this workshop successful; not just a plain field trip where you show up and start looking around.

We started by walking across the street for an introduction on the beach facing Long Island Sound. Eric had written a key to goldenrods in a LIBS newsletter from 1992, and this was used as the basis for the identifications. A short addendum was handed out which updated nomenclature, documented occurrence in our area, and provided some information on the *Solidago altissima/canadensis/gigantea* complex.

Participants worked singly or in small groups, wandering around Eric's yard to



use the keys to identify 25 specimens of approximately 19 species of goldenrods. Some of these were growing naturally at the edge of the yard. However, most were pieces of live plants that were in pots of water or planted in pots. At the end, a review was conducted to discuss why each specimen keyed to its correct species ID. Additionally, people brought their own specimens in pots or pressed, and Eric went through these to discuss the relevant characters of each.

An added treat for the naturally oriented group was the sighting of a rare butterfly. During the review of species in the backyard, a Giant Swallowtail flew around the participants a couple of times before departing. This is possibly only the second sighting ever in Suffolk County.

If that wasn't enough, afterwards Eric led a small group on a short walk to see *Hottonia inflata*, Featherfoil. It was just emerging at this time, but it is a state rare plant.

[Ed. note: Photographs intentionally provided without captions or credits which were not available at the time of printing.]



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UPCOMING PROGRAMS

October 9, 2012* **Tuesday, 7:30 PM**
Steve Young: "Invasive Species Early Detection and Rapid Response: How LIBS Members Can Help." Once an invasive species has established itself on the island, early detection and eradication is the most effective way to reduce this ever-present threat to our native plants and ecosystems. This presentation will explain how LIBS members have been, and can be, an effective and important part of the effort coordinated by the Long Island Invasive Species Management Area (LIISMA). Some of the low-abundance species to be aware of will be shown. Steve is the chief botanist of the New York Natural Heritage Program and the coordinator of LIISMA. He has spent 20 years surveying the rare plants of New York State and is now focused on the threat of invasive species on Long Island.

Location: Museum of Long Island Natural Sciences, Earth and Space Science Building, Gil Hanson Room (Room 123), Stony Brook University, Stony Brook

Reminder - no meetings in January or February.
Next meeting March 13, 2013.

* Refreshments and informal talk begin at 7:30 p.m.
Formal meeting starts at 8:00 p.m.
Directions to Muttontown or Stony Brook: 516-354-6506

November 13, 2012* **Tuesday, 7:30 PM**
Andy Greller: "Leapin' Lemurs! The Natural History of Madagascar." Drawing on the personal experience of an ecotour that visited some key spots for biodiversity, Andy scoured the web for the most illustrative examples of the bizarre plant and animal life on that troubled island. He presents an illustrated talk that puts it all into ecological perspective. Andy is Vice President of LIBS, Past President of the Torrey Botanical Society, and Professor Emeritus in Biology at Queens College - CUNY.

Location: Bill Paterson Nature Center, Muttontown Preserve, East Norwich

December 11, 2012* **Tuesday, 7:30 PM**
Members Night: Members are welcome to bring photos, stories, specimens, and tales of peculiar sightings of favorite plants. A great opportunity to show what you have found while exploring on Long Island or elsewhere. Please call Rich Kelly (516-354-6506) in advance to advise as to the approximate number of images/slides that you would like to show and preferred medium of presentation. Thanks.

Location: Bill Paterson Nature Center, Muttontown Preserve, East Norwich